Sherwood Forest Hospitals NHS
NHS Foundation Trust

Agenda Item:

Board of Directors Meeting Report

Subject: **ESTATE STRATEGY**
Date: **January 2014**
Author: **Keith Turner – Head of Estates & Facilities**
Lead Director: **Peter Wozencroft - Director of Strategic Planning & Commercial Planning**

Executive Summary: The "Estate strategy" sets out how the Trusts estate will be developed and configured to meet the needs of the clinical services in line with the Clinical strategy, and also how the estate will be rationalised to make best and most effect use of the space we have. The need to make every meter of space cost effective and of the highest quality will then result in an efficient and effective estate that is not a burden to the Trust. The document does not include sections for either Newark or Mansfield Hospitals as the clinical strategy needs to be finialised and the requirements , defined, so that the Estate Strategy reflects there needs and is developed in line with them. These sections will be added as soon as the information is available, and the document will come the Trust Board for approval
Recommendation: • **The Policy is approved, and the direction of travel acknowledged** • **The Trust Board instruct the Production of a detailed Full business case to clearly set out the changes, the costs, and the delivery methodology.**

Relevant Strategic Objectives (please mark in bold)	
Achieve the best patient experience	**Achieve financial sustainability**
Improve patient safety and provide high quality care	Build successful relationships with external organisations and regulators
Attract, develop and motivate effective teams	

Links to the BAF and Corporate Risk Register	Yes, Section 1.2 – "Retained Estate not fit for purpose"
Details of additional risks associated with this paper *(may include CQC Essential Standards, NHSLA, NHS Constitution)*	No additional risk
Links to NHS Constitution	N/A
Financial Implications/Impact	There will be a need to identify funding
Legal Implications/Impact	None
Partnership working & Public Engagement Implications/Impact	N/A
Committees/groups where this item has been presented before	Capital Management Group Consultation has taken place with CE, Directors and Divisional Managers
Monitoring and Review	Process to be agreed
Is a QIA required/been completed? If yes provide brief details	Yes, will be required and will form part of next phase.

Sherwood Forest NHS Foundation Trust

Estate Strategy: Strategic Direction

January 2014

EC HARRIS
BUILT ASSET
CONSULTANCY
AN ARCADIS COMPANY

Version control

Issue	Revision No.	Date Issued	Description of Revision: Page No.	Description of Revision: Comment	Reviewed by:
1		6.1.14			
2		14.1.14	Revised draft following client discussion 7.1.14		J Harrison
3		15.1.14	Final review, incorporating all revised illustrations		G Braterman J Harrison J Priest
3-1		16.1.14	Diagrams in Appendix 3 revised for clarity and consistency in presentation		J Priest

Contents

1 Introduction

The estate strategy will set out how the Trust's estate is to be developed and configured to meet the needs of the clinical services in line with the clinical strategy. The ultimate aim of the estate strategy must be to ensure that all space is of high quality and well utilised in order that it can be productively deployed to support consistently high quality service delivery in a cost effective manner.

This document represents the first stage in this estate strategy (ref figure 1), and provides an outline strategic direction and feasibility analysis focussed primarily on the Kings Mill Hospital site. The strategy will be subsequently developed (stage two) ensuring alignment to the Trust's clinical services strategy (also in development) and financial plans. The complete estate strategy will incorporate the whole Trust estate to capture the entire service strategy, which includes Newark and Mansfield Community Hospitals where Sherwood Forest NHS FT is a key provider of integrated care in the community.

Figure 1. *Stages to produce an effective Estate Strategy for Sherwood Forest NHS Foundation Trust*

Stage one:	■ To provide a high level strategic assessment of the Kings Mill Hospital estate and set out a minimum of two options to identify immediate strategic priorities in relation to the main acute hospital site and to inform future strategic planning
Stage two:	■ To provide a worked up estate strategy to encompass the whole estate, integrated with clinical service and financial planning in line with Integrated Business Plan requirements.

Sherwood Forest NHS Foundation Trust has invested considerably in the estate in recent years, particularly in new hospital accommodation built under a PFI contract, set to run from 2005 to 2043. The new build houses the majority of inpatient accommodation at Kings Mill Hospital, most outpatients clinics (in the Kings Treatment Centre) and dedicated facilities for women and children, and was completed in 2011.

The hospital also has approximately 140,000m2 of retained estate which includes an acute core housing imaging and theatres within buildings that have been built in a piecemeal fashion from the 1940s to early 2000s, and an Accident and Emergency Department, with Emergency Assessment Centre provided in retained 1980s accommodation. Most support services are provided across this retained estate.

Despite the recent PFI investment, some key functions, notably theatres, imaging, pharmacy and CSSD are housed in accommodation that is no longer considered fit for purpose by the Trust with the following identified as key delivery areas:

1 Provision of high quality, state of the art operating theatres

2 Pharmacy and CSSD in accommodation which is fit for purpose

3 Imaging facilities which are in a quality environment, fully integrated and central to all relevant clinical services

4 Support functions which have the capacity to deliver, e.g. Records, MEMD and discharge areas

5 Patients and visitors find access easy, and simple, with the minimum of stress

There are a number of other areas which will also form a key part of the development plans, and need to be part of the whole approach:

1 The amount of outpatient space and the level of activity, now and in the future

2 The increasing demand for endoscopy, and the future requirements

3 The need to change approach to space allocation – no longer allocating facilities to individual staff, but ensuring people have access to appropriate facilities to carry out their roles as required

4 The amount of administration space and how best to configure it

5 The demolition of poor quality buildings and the best use of the space

6 Future demands on A&E and out of hours services

It is important to note that important areas of services strategy are emergent. For example, commissioners' strategy on the community based pathway, future theatre and out-patient activity, and the amount and type

of wards. Although these factors need to be better understood and modelled into specific implementation plans, they will not fundamentally change the direction of travel.

The Trust now faces a conundrum where some key acute functions will need to be replaced, but the on-going operational costs of the Trust will need to be reduced. In short, major change to the estate is required to ensure:

- All hospital facilities are provided in appropriate accommodation
- The Trust estate is well utilised
- The Trust's revenue requirement related to estates costs can be brought in line to a level appropriate for Trust activity and income.

Achieving this will be central to the Trust realising its wider strategic objectives and the analysis set out here will be incorporated into the Trust's Integrated Business Plan. Experience strongly indicates that major change must be led at Board level with complete support from each clinical division with staff and patient engagement to ensure successful outcomes.

This stage one report is based on the information provided to date. Further information/data is required to validate where assumptions have been made in order to complete the stage two estate strategy report, these requirements are covered in the conclusion and next steps.

2 Executive Summary

The need to review the estate has been driven by a number of quality and cost issues identified by the CQC and Monitor. Observation and experience indicate that a major issue facing the Trust is underutilisation of part of the estate, and due to the age of some of the retained estate, costs are likely to form a disproportionately high component of Trust operating costs[1]. The Trust has invested considerably in the estate through a PFI, with the construction completed in 2011. This has replaced the majority of inpatient and outpatient accommodation at Kings Mill Hospital. However, essential clinical services (notably surgery and imaging) as well as essential clinical support services (pharmacy, including aseptic suite and CSSD) are provided in poor quality retained estate, and these facilities require relocation as a high priority if all core clinical services are to be provided from appropriate fit for purpose facilities to the required standard to ensure a consistently high level of clinical quality and safety.

Utilisation will need to be improved and the total estate rationalised in order to improve the operating cost basis for the Trust. Additional investment will be required to achieve such savings, which will need to be subject to further cost benefit analysis and a business case process.

A minimum of two strategic options were requested to help inform for the future of the estate at Kings Mill. The purpose of this was to illustrate an approach that addresses the minimum that would need to be achieved to meet those estates issues identified as urgent requirements by the Trust, as well as establish longer term sustainable solutions that ensure an estate that is both high quality and well utilised.

A total of five options were identified and these are set out in Appendix C. These reflect the outcome of an iterative process of analysis and discussion between the Trust's estates team and EC Harris. Option 1 was initially prepared as a 'do minimum' option to enable the replacement of the acute core as well as pharmacy and CSSD blocks. Options 2 and 3 were developed as alternative strategies to achieve improved estate utilisation, particularly the PFI new build estate. However, it was agreed that options 2 and 3 would have compromised functional relationships and accommodation adjacencies too far, undermining the ability of the Kings Treatment Centre or the Women and Children's Hospital to a single 'front door' for patients using these services.

Option 4 was developed as an aspirational proposal (approximate capital spend of £81M excluding VAT, over a minimum 8 year programme) that attempted to address accommodation priorities, improve utilisation whilst maintaining the quality of patient experience by keeping, as far as possible, the distinct areas for outpatient (Kings Treatment Centre), inpatient and women and children's services.

Following this option we were asked to test the feasibility of an option to replace the accommodation specifically for pharmacy and CSSD as well as theatres, these being identified by the Trust as the most urgent priorities. The purpose was to establish how these priorities could be addressed in the shortest

[1] Estates performance benchmarking data will be required to establish the extent to which estate utilisation and estate related operating costs vary compared to peers.

timeframe, and with minimal risk and cost. By prioritising theatres, pharmacy and CSSD replacement above the rest of the acute core replacement, a quicker and more cost effective solution is found for these areas in need of an urgent improvement in quality.

This replacement could be achieved over a 3 year programme and with a capital spend estimated at approximately £21m (excluding VAT). The advantage of this approach is that minimal decant is required to establish a site for a building to accommodate those essential service relocations and can be achieved at minimal cost, programme and disturbance to other parts of the hospital. This option was stated as Option 1a, effectively a revised 'do minimum'.

Pursuing these immediate priorities for Kings Mill Hospital does not preclude achievement of overall objectives in future phases. It should be noted that because of how the strategy development evolved, with option 1a being developed subsequent to option 4 in light of a reduced 'do minimum' brief, aspects of option 4 are mutually exclusive to option 1a, but this can be addressed through further revision.

This stage 1 strategy report therefore makes the following recommendations:

1. Develop a strategic outline case for the replacement of theatres, pharmacy and CSSD services through a scheme akin to that described in option 1a
2. Conclude the estates strategy development ensuring that the following are taken into account:
   - clinical services strategy
   - a review of the whole Trust estate
   - financial plans and other requirements to ensure the estate strategy is compatible with the Trust's integrated business plan
3. All required data to support a sufficiently robust analysis is obtained either through the Trust or through surveys and other investigations as required.

A: Kings Mill Hospital

3 Existing Estate and Configuration

3.1 Description of the estate

Kings Mill Hospital is located in the west of Mansfield, in a part of the central Nottinghamshire conurbation that enjoys good road access. The hospital site is bounded at the south by the A38, a main arterial road that connects to the town centre and M1, and at the west by the town's ring road. The location is a mixed suburban location with the immediate environs characterised by a mixture of residential, industrial, agricultural land and recreational uses.

The site comprises an area of 20 hectares of space and 121,000m2 of accommodation (Gross Internal Area), of which approximately 75,000m2 is new build PFI accommodation and 46,000m2 is retained estate.

The most substantial buildings are the new build facilities delivered under the PFI agreement and are less than 10 years old (with construction having begun in 2005 and completed in 2011). These provide the main outpatient and inpatient accommodation, but the hospital has a substantial retained estate of variable age, condition and suitability. We have been advised that parts of this estate, notably theatres, pharmacy and CSSD are considered by the Trust's estates team to be beyond economic repair.

Figure 2 – Aerial Photograph of Kings Mill Hospital Site (from Google Earth) with site block overlay

NB – Building to the south east of the hospital site (the Dukeries) was the previous maternity hospital and has since been demolished.

There are over 30 different buildings on the site, many of which comprise of relatively small outbuildings. It is not the purpose here to provide a comprehensive description of each one, a list with brief note of the main facilities or smaller buildings where, because of location, potential or building specific issues need to be considered a priority within the estates strategy may be found in Appendix A.

4 Activity and utilisation – Statement of future requirements

The strategy for the future use of the estate must be clinically led. This means that the future estate configuration must have the functionality and capacity to support anticipated future need. This strategy is based on the Trusts Clinical Services plan and utilizes the review of activity in the work done to date for the Trust's Clinical Services Plan.

Whilst this work is in a developmental phase, the capacity requirements should be considered as working assumptions of future need. The estates strategy should be revised and updated to meet any change in clinical direction as referenced by the developing clinical services plan to ensure that the plans are in accordance with the clinical needs of the local population and business needs of the Trust, and that any subsequent business case for capital investment is robust.

Work has been carried out by Strategic Healthcare Planning/Provex to determine scenarios that will drive future demand for services. This analysis sets out capacity plans in terms of a number of scenarios, driven by different possible assumptions about:

- Demand – i.e. changes in the levels of activity commissioned from the Trust
- Supply – changes to/improvements in Trust throughput, productivity and efficiency.

For the purposes of the initial strategic estate document option development, the base case scenario of the Clinical Services Plan has been used. Further details are set out in Appendix B.

5 Accommodation assessment

An accommodation requirement for displaced accommodation has been assessed as follows:

Figure 3 – Estimated areas of services to be relocated (departmental gross area)

Function	Existing area (Departmental Gross (m2)	Assessed area required (m2)	Comment	More space required / Less space required
Main Theatres	2439	2015	Theatres reduce from 9 (Inc. 1 mothballed) to 5, taking into account current space standards	
CSSD	797	973	Based on 2 multi-chamber washers, 5 sterilizer facility	
Pharmacy & Aseptic Suite	966	930	Based on benchmark for similar hospitals. This area does not include dispensary and store, as this is already provided within the PFI new build.	
Imaging	1464		NB required area includes MRI. Existing areas inefficient due to circulation & piecemeal development	
MRI	228	1104		
ITU	856	1191	New space standards applied.	
Cath lab	447	447	NB - Required area for cath lab not yet assessed	
GU medicine	1721	804	Based on 50% clinical accommodation	
Endoscopy	1069	1168	Assume growth to 4 x scope rooms	

NB – The area has been assessed based on Health Building Note guidance unless otherwise stated.

The area shaded red represents those facilities that would need to be relocated regardless of options. Within this category, the theatres, CSSD and pharmacy are shaded a deep red to illustrate that these are urgent high priority requirements. Imaging, MRI, ITU and cath lab are important areas to relocate, but these are not as urgent and are therefore not considered as part of the absolute 'do minimum'. (These replacements are not included in option 1a, although they are in all other options). The grey shaded areas represent facilities that, whilst provided in good quality accommodation, are likely to move to provide opportunities to enable options and also to enable these departments to be resized to meet need (the Trust has advised that endoscopy should be increased from 3 to 4 scope rooms, and that GU medicine could operate with a 50% reduction in the number of exam/consult and treatment rooms).

6 Strategic Options

To date five high level options have been developed to inform Trust decision making about the overall strategy. These options provide different solutions to:

1 Ensure all services are provided from estate that is in good enough condition and acceptable quality

2 Achieves improved utilisation of facilities overall

3 Achieves good functional relationships between departments, which in turn supports quality and productivity in service delivery.

All options must achieve, as a minimum, the first requirement. The second and third requirements described here are achieved to varying extent by each of the four options. The options are described in Appendix C. These are summarised below:

Figure 4: Options

Option	Key features	Assessment
1	Places theatres and endoscopy in level U of Kings Treatment Centre. Imaging and MRI relocated to level 0 Tower 2 (current endoscopy location), pharmacy and CSSD located on current histopathology building site (histopathology previously being amalgamated with pharmacy). New ITU established in vacated acute core zone	Complex phased programme, which does not sufficiently address under-utilisation of wards and outpatient accommodation. **Recommendation: Reject**
1a	Revised 'do minimum' that replaces pharmacy and CSSD in new building to the south of the current acute core. Theatres rebuilt at the southern part of the existing acute core (replacing old theatres and old catheter lab subsequently used by MEMD)	Establishes urgent accommodation replacement with minimal phasing/enabling works. It is accepted that this is only the minimum to address urgent priorities, but further work could be carried out subsequently **Recommendation: Prepare business case and establish master-plan for next stage**
2	Option 2 seeks to rationalise the use of outpatient accommodation further than option 1. ITU is established on tower 2 level 1 and cath lab and endoscopy are located in tower 3 level 5 (current location for GU medicine).	Improves utilisation, but creates poor adjacencies, esp. poor relationships between ITU, EAU and A&E, as well as distant location of endoscopy and cath lab from surgical areas. **Recommendation: Reject**
3	Pharmacy and CSSD are established in level U. Most of level 0 of the Kings Treatment Centre is given over to a new surgical zone (endoscopy, theatres, and cath lab), with level 0 of Tower 2 housing imaging.	Achieves good utilisation but undermines the patient 'front door' to outpatients through the use of most of the Kings Treatment Centre at Level 0. An obstetrics/gynaecology ward is displaced compromising access via the Women and Children's Hospital front door. **Recommendation: Reject**
4	Option 4 has been developed following Trust team comments on options 2 and 3.	Increases asset utilisation, but maintains key ground floor area in KTC for outpatients and maintains integrity of functional relationships at Women and Children's hospital. **Recommendation: Develop, but modify in context of option 1A implementation (if approved)**

7 Indicative Costs and Programme

A set of indicative costs has been estimated using the Healthcare Premises Cost Guides (HPCGs). This is a standard measure for providing initial estimates of required capital expenditure for hospital build and major refurbishment projects, and these are based on benchmark rates for actual equivalent hospital project costs schemes.

The following outturn costs were estimated:

Figure 5 – Estimated costs and programme for strategic options outlined

Option	Capital cost estimate (exc VAT)	Estimated programme duration
1	£50m	5 years
1a	£21m	3 years
2	£65m	7 years
3	£73m	8 years
4	£81m	8 years

It should be noted that these cost estimates exclude VAT. The Trust's liability for VAT will be determined by the scope of works as well as the procurement route for works. We would recommend that the Trust seeks appropriate specialist advice in order to optimise its VAT position.

8 Conclusions and next steps

There are a number of objectives that will drive the estates strategy for Kings Mill Hospital. These are:

1 The absolute priority to replace main theatres, pharmacy and CSSD as a minimum. These replacements have been identified as essential to achieving a minimum standard of accommodation for all clinical and direct clinical support accommodation

   Long-term efficiency improvements will require the Trust to improve utilisation of the estate, particularly parts of the PFI estate and to reduce unit estates operational costs as a percentage of the total to ensure sustainable operation over the longer term. However, this will require further investment.

2 The programme and progress of works will be dependent on the availability and sources of funds.

Irrespective, each proposed change will need to be subject to further business case appraisal. It is not possible, therefore, to map out a definitive pattern of strategic change. Even if funding could be secured, full implementation of option 4 would require a programme of at least 8 years.

Option 1a represents a minimum required to achieve urgent priorities, and option 4 represents an option that could achieve good functional adjacencies and efficient utilisation. Option 4 would require a complex phasing programme in any case and it is not known, at this stage, how much can be achieved. It is therefore recommended to commit to option 1a as an early priority, but seek to develop a proposal more akin to option 4 as a long-term master-plan for the site. Some aspects of option 4 as currently developed would be mutually exclusive to option 1a (theatres are located in existing accommodation on the ground floor of option 4, but are located in a new building that is a part replacement for the existing acute core in option 1a).

However, a future rationalisation plan should be worked out and it is recommended that the principles, if not necessarily each of the elements, of Option 4, be developed as a site master-plan.

The following are recommended as next steps:

1 Review detailed capacity plans across Trust projected activity, taking into account commissioner and Trust work on model of care and future service demands. This is required to establish the total functional requirement for the hospital, based on current and planned future activity for the hospital, taking into account a number of realistic scenarios. Verify the requirement for inpatient accommodation, outpatient facilities (generic and specialist), imaging and support accommodation, to establish the whole hospital requirement.

2 Verify capacity plans and future functional content requirements for both generic and specialised accommodation.

3 Review and validate all relevant data regarding estates performance in addition to service requirements which is required to support any case for change to the Trusts estate.

4 Develop benchmarking on estates performance, verifying for accuracy of information and peer group comparison.

5 Develop a long term master-plan to establish:

- Prioritisation of future change beyond the urgent requirements already identified
- Phased implementation to establish how future needs can be met, addressing major issues in priority order, and enabling each phase to be committed on a stand-alone basis without either tying the Trust in to further strategic investment or constraining the master-plan intentions unduly.

6 Develop Strategic Outline Programme and required business case for projects supported by the Trust Board.

- To establish deliverability
- Detailed costs
- Delivery plans
- Methodology
- Trust sign off

7 Meet with Trust senior management and clinical leadership in order to communicate the reasons why major changes in the way of working and organisation of the estate are required, and agree how the Trust's Estates and Facilities Directorate and technical advisers will be able to best deliver this change.

B Newark Hospital

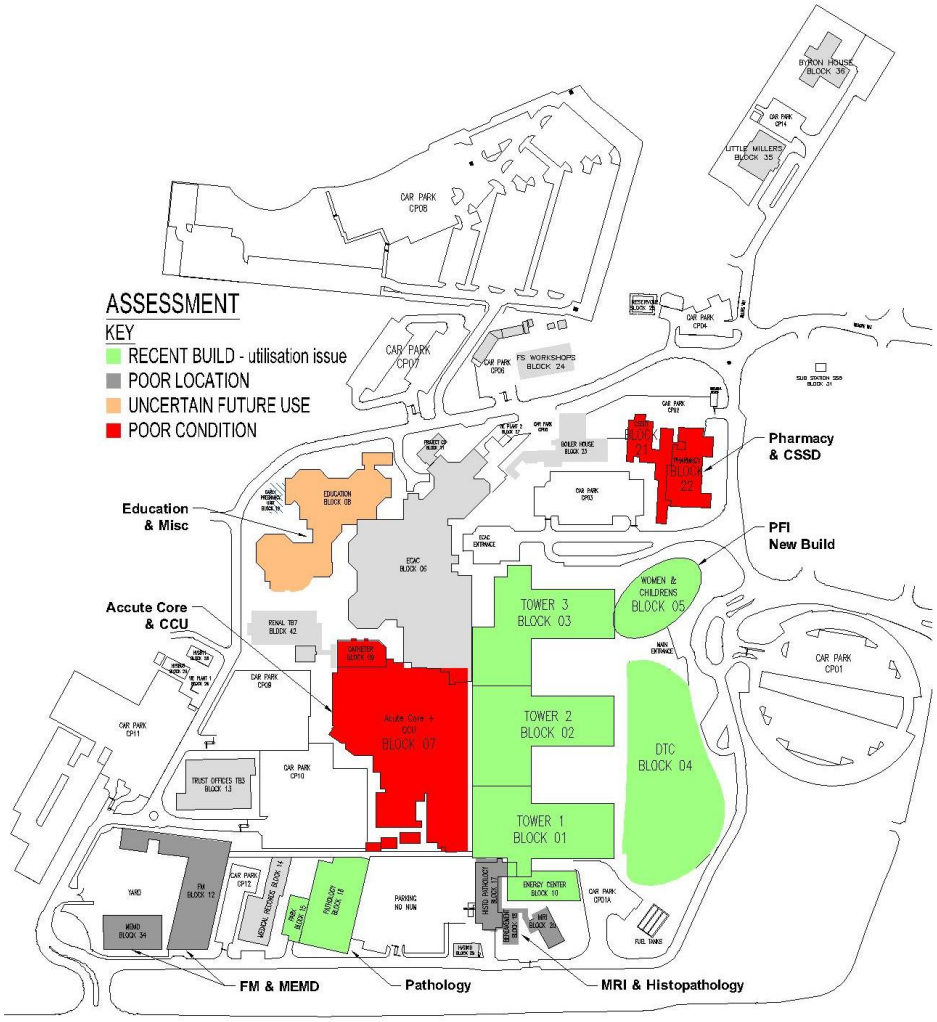
To be developed.

C Mansfield Community Hospital

To be developed.

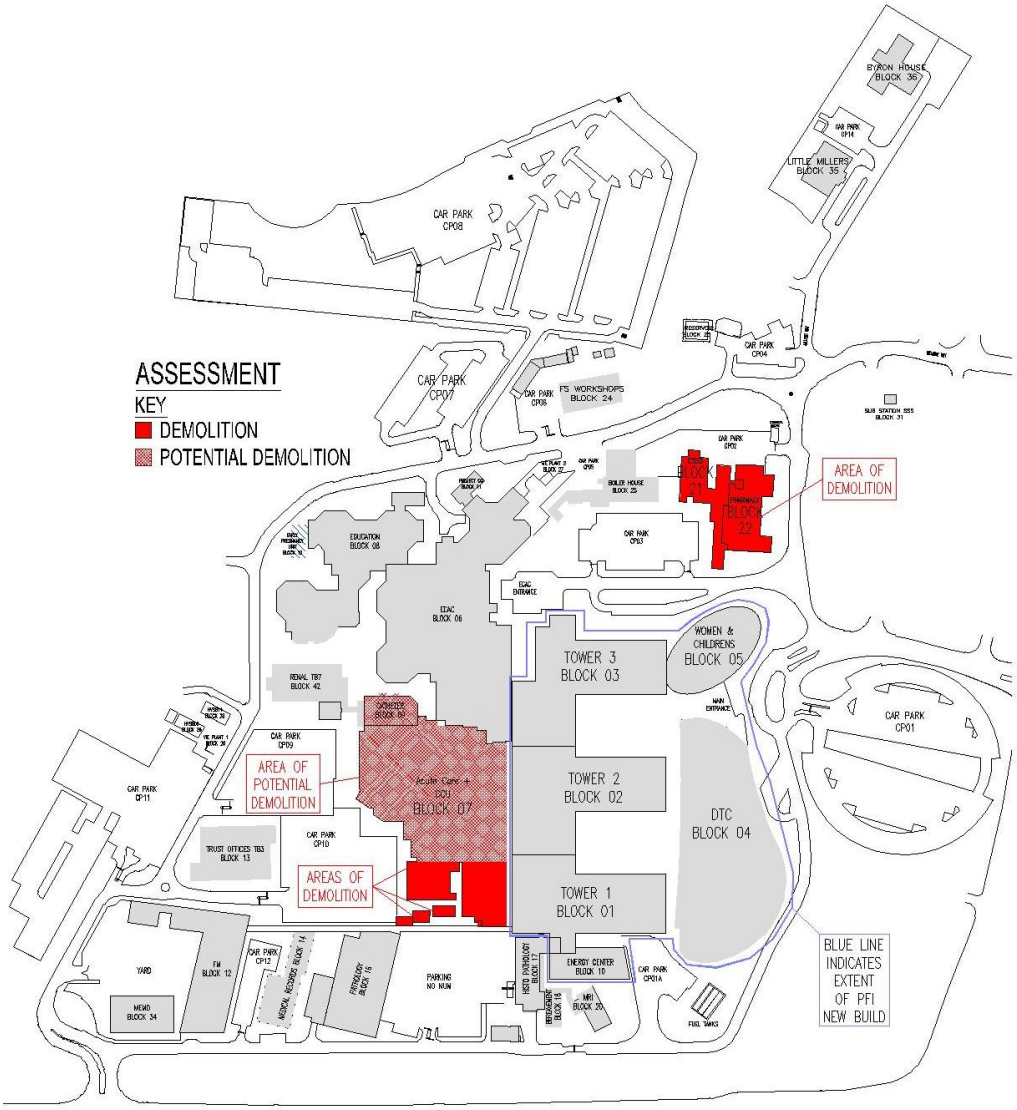
Appendix A Kings Mill site

Figure A1. Main issues at Kings Mill Site



NB Facilities highlighted where, because of potential or building specific issues, they need to be considered a priority within the estates strategy

Figure A2. Site layout, block reference numbers



The main areas of accommodation comprise of the following:

Blocks 1 – 3

These blocks comprise of 3 six storey T shaped towers rising 7 storeys of new build PFI accommodation. These blocks, at the upper levels comprise of the main inpatient ward accommodation.

At ground level the facilities include:

- Tower 1 - Day surgery
- Tower 2 – Endoscopy and imaging to support the Kings Treatment Centre (block 4), together with pharmacy
- Tower 3 – Outpatient accommodation and breast screening unit

From levels 2 – 5 the accommodation principally comprises of ward accommodation, generally arranged in 2 x 24 bed wards with 50% single rooms. In addition, it should be noted that:

- Tower 3 at level 1 comprises of the maternity unit, and includes 2 obstetric theatres
- Tower 3 at level 4 comprises of the ambulatory cancer centre
- Tower 3 at level 5 comprises of genito-urinary medicine clinic (outpatients)

Staff and visitor restaurants are accommodated at level 6.

Block 4

Known as the Kings Treatment Centre this block comprises of a 2 storey facility that includes the majority of outpatient accommodation. Sloping topography allows for a part basement/lower ground floor, which accommodates a range of gym, workshops and other therapeutic environments to support physical therapies/ rehabilitation. Hydrotherapy is also located in this area.

The ground and first floors comprise of general outpatient consult/exam and treatment rooms, along with some specialist outpatient facilities associated with the relevant specialist outpatient activity, e.g. visual field testing, audiology, dermatology treatment. Clusters of outpatient accommodation are set out in arrays, with sky-lit circulation/waiting areas bringing daylight into otherwise deep plan accommodation.

Block 5

This is the women and children's hospital, providing a separate "front door" for women and children's services and is also linked to tower 3 at the ground, first, and second floor levels. The accommodation is stepped back at level 2, providing a rooftop play area accessible from the paediatric inpatient ward.

Blocks 6 and 8

The Accident and Emergency Department, as well as the Emergency Assessment Centre, and the primary care out of hours centre, are located on the ground floor of this facility. This building dates from the 1980s and comprises of predominantly nucleus accommodation, which was the prevailing design approach for acute hospital design from that time. Upper levels (1 and 2) previously included ward accommodation, but now house a range of non-clinical offices and other support functions. Due to site topography, the building can be entered from level 2 at the northern end.

Block 8, the education block represents the other main area of 1980s nucleus accommodation (linked to block 6), which also previously comprised of predominantly clinical accommodation, but is now used primarily but not exclusively for educational purposes, being leased to the University of Nottingham. The building has been subject to refurbishment and recent extension to provide educational facilities, such as a lecture theatre. It is not known at this time what the University of Nottingham's longer term intentions are regarding future occupation.

Block 7, block 9 and 42

This is a single phase block developed in phases from the 1940s to 1990s. This block contains the main imaging departments, 9 theatres (1 of which is mothballed) as well as an 18 bed ITU and renal dialysis unit as the most recent developments.

The Trust has advised that this block is beyond economic repair, and that its facilities should be re-provided either through new build, refurbishment of available accommodation elsewhere in the hospital or both.

Block 9 is a recent extension accommodating the Trust's catheterisation lab, and block 42 a further extension housing renal dialysis.

Block 16

This is the pathology block, built as part of the new build PFI facilities. This is a two storey building, with all labs on the ground level and associated offices on level 1. We have been advised that the requirement for pathology could be reduced in the future should plans for a pathology network that establishes another provider as a hub go ahead. The feasibility of internal reconfiguration to allow this building to accommodate other functions such as histopathology should be investigated.

Blocks 17, 18 and 20

These buildings cover histopathology (block 17), bereavement (block 18) and MRI (block 20). These are three small linked buildings at the south of the site (immediately south of Tower 1 and the energy centre). The key issue is that these facilities may be in a poor location, potentially blighting a future development zone or have poor adjacencies (MRI should ideally be located with the main imaging department).

Blocks 21 and 22

These blocks comprise of a single storey 1940s building, which houses the CSSD and pharmacy departments. EC Harris has been advised that this facility is beyond economic repair, and the services would need to be provided in alternative locations.

Blocks 12 and 34

Block 12 is a new building that accommodates Facilities Management support functions. The key point to note about this facility is the distance between FM support and clinical accommodation in particular. This increases travel distance for soft FM services, e.g. linen and food. Any long term master plan should enable a more optimal FM service delivery base, even if this is not an immediate clinical or estates priority.

Block 34 comprises of the Medical Equipment and Medical Devices facility. This is a support function where the location does not have the same impact on productivity compared to a sub-optimal location for FM for example. However, explicit reference is made here because other parts of Medical Physics are located in the Education Block, and this should be co-located with MEMD.

Appendix B Base case scenario capacity plan assumptions

Figure B1 – Factors influencing demand on inpatient accommodation and theatres

Demand driver	Assumptions
Demography	ONS 2011 based subnational population projections by district and age group
Epidemiology	Projected impact on obesity
Demand management	Avoidable admissions: Fully moving to latest Directory of Emergency Ambulatory Care (v3) targets by year 4
Market share	Based on assessment of market share for each specialty/locality
Technological change & service developments	No change
Length of stay	Achieving 25% shift towards national media length of stay for all HRGs by yr 4
Step down and intermediate care	General rehabilitation patients target length of stay 18 days, 85% occupancy; stroke rehabilitation requirements based on National Stroke Strategy
Day case and short stay surgery	Trust already in top decile nationally, so no further change projected at this stage
Throughput and utilisation	**Beds** Inpatient beds 90% occupancy (except maternity 80% and paediatrics 70%). Day case turnover rate 1.5 cases per bed day. It should be noted that EC Harris Health Planners would advise the following utilisation rates would be appropriate optimal rates: - Adult inpatient beds, 85% - Maternity beds, 75% - Paediatric beds, 65%
Theatres	48 weeks operating per year, 8 hours per day, 5 days per week, 80% end theatre utilisation

Impact on outpatients

Figure B2 – Factors influencing demand for outpatients accommodation

Demand driver	Assumptions
Demography	ONS 2011 based subnational population projections by district and age group
Epidemiology	Projected impact on obesity
Market share	Increase proportion of referrals from Newark & Sherwood CCG practices 50%, towards proportions form Mansfield & Ashfield CCG
Paediatric services	Reduction of 10% in first and follow up attendances
Referral rates	Target based on achieving 25% shift towards national upper quartile rates
First: Follow-up attendance ratios	Target based on fully achieving National Media rates

Impact on facility requirements

The impact on facilities requirements has been assessed as follows. NB, these totals relate to Kings Mill Hospital rather than the Trust as a whole.

Beds

Figure B3 – Proposed change in bed allocation

Beds	2012/13 baseline	Base case change	Future requirement
Day case	88	5	93
Elective IP	53	2	55
Non-elective IP	482	-28	454
Sub-total acute beds	623	-21	602

NB It should be noted that this base case scenario is also predicated on an increase of 93 general rehabilitation beds and 4 stroke rehabilitation beds. The Trust has indicated that there would be benefit in developing an appropriate rehabilitation facility on site. The Trust has a strategically important brownfield site immediately adjacent to Kings Mill Hospital that would be suitable for such a development, this being the recently cleared site that previously housed the Dukeries (old maternity) building. This would enable the facility to deliver a rehabilitation model separate from the acute facility but with the potential for seamless assessment and rapid transfer (step up and step down) and benefit of economies of scale in FM service delivery.

This analysis would indicate that there can be a total reduction of 1 ward, but this would need to be validated against the agreed capacity plan, as well as overall case mix.

Theatres

Figure B4 – proposed change in theatre allocation

Theatres	2012/13 baseline	Base case change	Future requirement
Day case	4	-1	3[2] (4)
Elective IP	8	-3	5
Obstetric	2		2
Total	14	-4	10 (11)

Outpatients

The total 2012/13 baseline for outpatient attendances is 297,616 attendances, with a projected level of activity of 298,356 by 2017/18. These are projected attendances for Kings Mill Hospital rather than the Trust as a whole.

The following logic has been applied to give an estimate as to the number of outpatient rooms:

[2] It is unlikely that one of the day surgery theatres could be re-purposed for elective activity, and the 2 obstetric theatres remain in place. The requirement is assessed as being for 5 main theatres (two with laminar flow) to replace the theatres within the existing acute core.

Figure B5 – outpatient accommodation requirement assessment

Average appointment duration (new)	20 minutes
Average appointment duration (follow up)	20 minutes
Session duration	3 hours 30 minutes
Patients seen per room per session	10
Available sessions per week	10
Number of patients seen per room (85% utilisation) per week	85
Number weeks per year	48
Patients seen in each consultation room per year	4080

The appointment duration for new and follow up patients, as well as new: follow up ratio, the use of supporting clinical accommodation (e.g. weighing) and specialist facilities will depend on the case mix. Without information related to case mix, there is no basis to assess the use of specialist outpatient accommodation.

However, this initial analysis would suggest that 74 generic exam-consult spaces would be required if clinic scheduling was optimised.

A total of 127 general exam/consult rooms were assessed as being provided within levels U – 2 in the Treatment Centre and towers, as well as level 5 on tower 3 where the GU clinic is provided. The following assumptions have been used when counting numbers of rooms:

- Single exam, consult of consult/exam rooms are counted as one space
- Suited consult/exam rooms are counted as a one space
- Triplet suites of a consultation room suited to two exam rooms are counted as two spaces.

The following have not been counted within the total:

- Treatment rooms
- Specialist rooms (e.g. audiology booths, gyms, therapy spaces, etc.), including spaces labelled as belonging to a specialty on a plan (e.g. ENT room) that might potentially be a generic space that could potentially be used more flexibly, depending on further information.

On first indications this would suggest a reduction in room use of 42% could be achievable (subject to the caveats outlined below). However, this could be an under estimate given the amount of outpatient contacts that take place in specialist/dedicated rooms. It is not possible to confirm this without details of activity by specialty and verification of the current scheduled and surveyed use of generic and specialist outpatient rooms over a period of time.

It should be noted that this is a very high level of accommodation assessment. The actual requirement for outpatients' accommodation would need to be determined by:

- Review of scheduling of clinics to manage peaks and troughs in activity across the week
- Use of specialist facilities – the Trust will need to decide the extent to which it may forgo some underutilised specialist facilities (at the risk of losing some activity) compared to their retention, which would mean the Trust bearing comparatively high unit costs for the provision of certain treatments.

This further analysis is required to verify the requirement for generic and specialist outpatient accommodation spaces, both in terms of volume and general arrangement. Further information would be required to determine the extent of enabling works that would be required to rationalise outpatient accommodation and provide facilities for displaced services to inform a business case.

Appendix C Options

Option 1

Option 1 has been described as the minimum required to achieve replacement of the acute core and pharmacy/CSSD. This is described as follows:

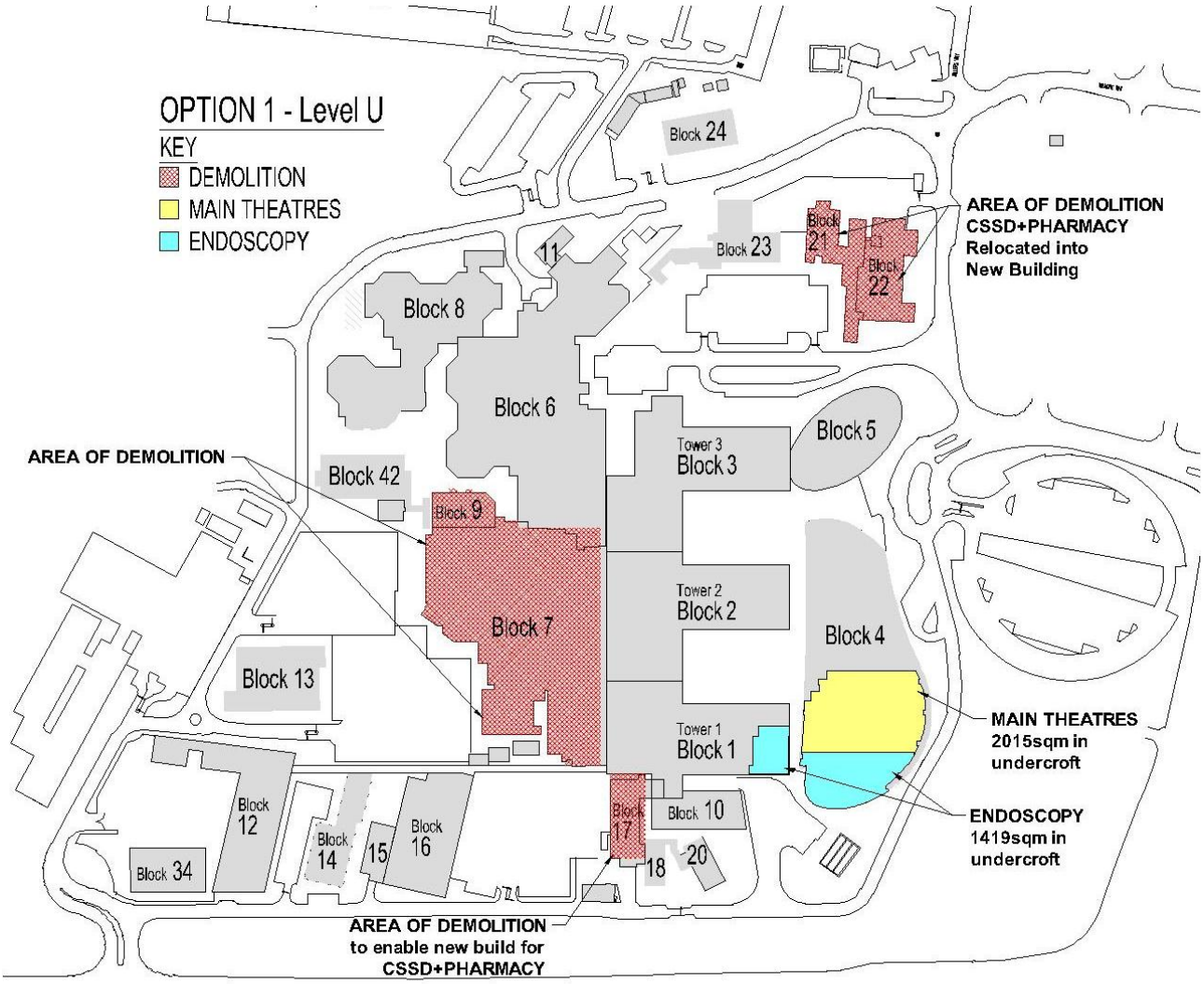
This option relocates the theatres and expanded endoscopy departments within the basement level (level U) within the Kings Treatment Centre.

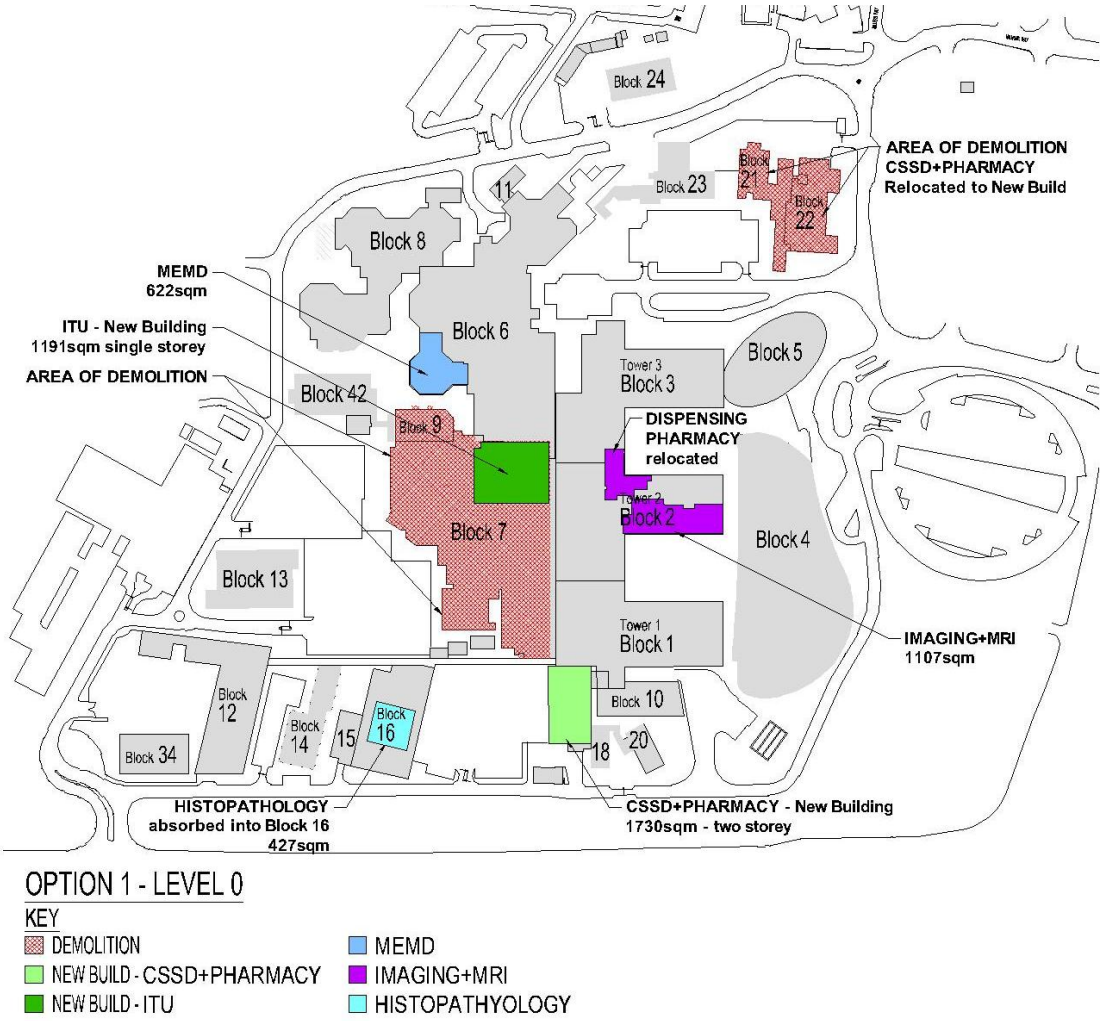
It is assumed that therapies space could be absorbed within the remaining outpatient accommodation on the upper levels of the Kings Treatment Centre, although it is likely that the hydrotherapy pool area would be used, and this would be more difficult to replace.

On the ground floor, imaging and MRI would move to the area vacated by endoscopy.

ITU would be replaced in the area vacated by the old imaging department and pharmacy and CSSD would be built in an area to the south of the main PFI accommodation, with the histopathology department either absorbed within the pathology block (through reconfiguration) or built as an extension. The location of the body store would need to be determined.

It is assumed that MEMD would be relocated with medical physics and that this can be absorbed within available space in the nucleus accommodation.





Advantages

- Replaces poor quality estate
- Creates zone for future clinical expansion and/or rationalisation
- Facilitates endoscopy expansion
- Clear surgical zone, albeit on two levels
- Main changes on two levels

Disadvantages

- Does not address under-utilisation of wards and GU medicine
- Hydrotherapy will be displaced, no clear alternative location on site

Option 1a

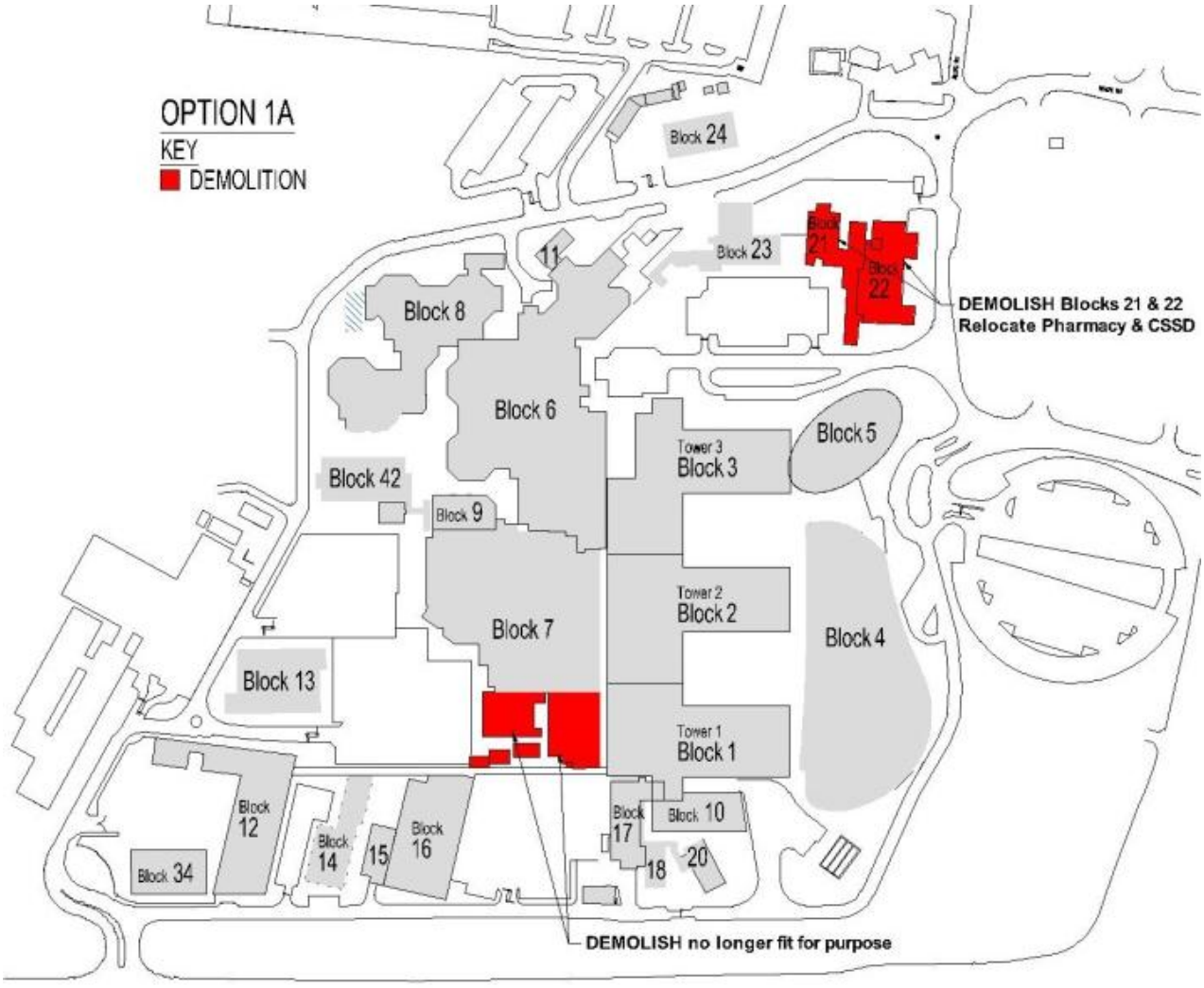
This option has been developed at the request of the Director of Estates and Facilities at the Trust. The approach taken here is similar to that in option 1 in that the purpose is to replace the critical accommodation that is no longer fit for purpose, but with the minimum expenditure. When option 1 was first determined, it was based on an assessed need to replace all of the acute core. However, the part of the acute core that poses the greatest risk in terms of clinical quality and safety are the theatres. The pharmacy and CSSD buildings also need replacement. This option is based on the minimum needed to achieve these replacements, whilst posing minimum disturbance to other areas.

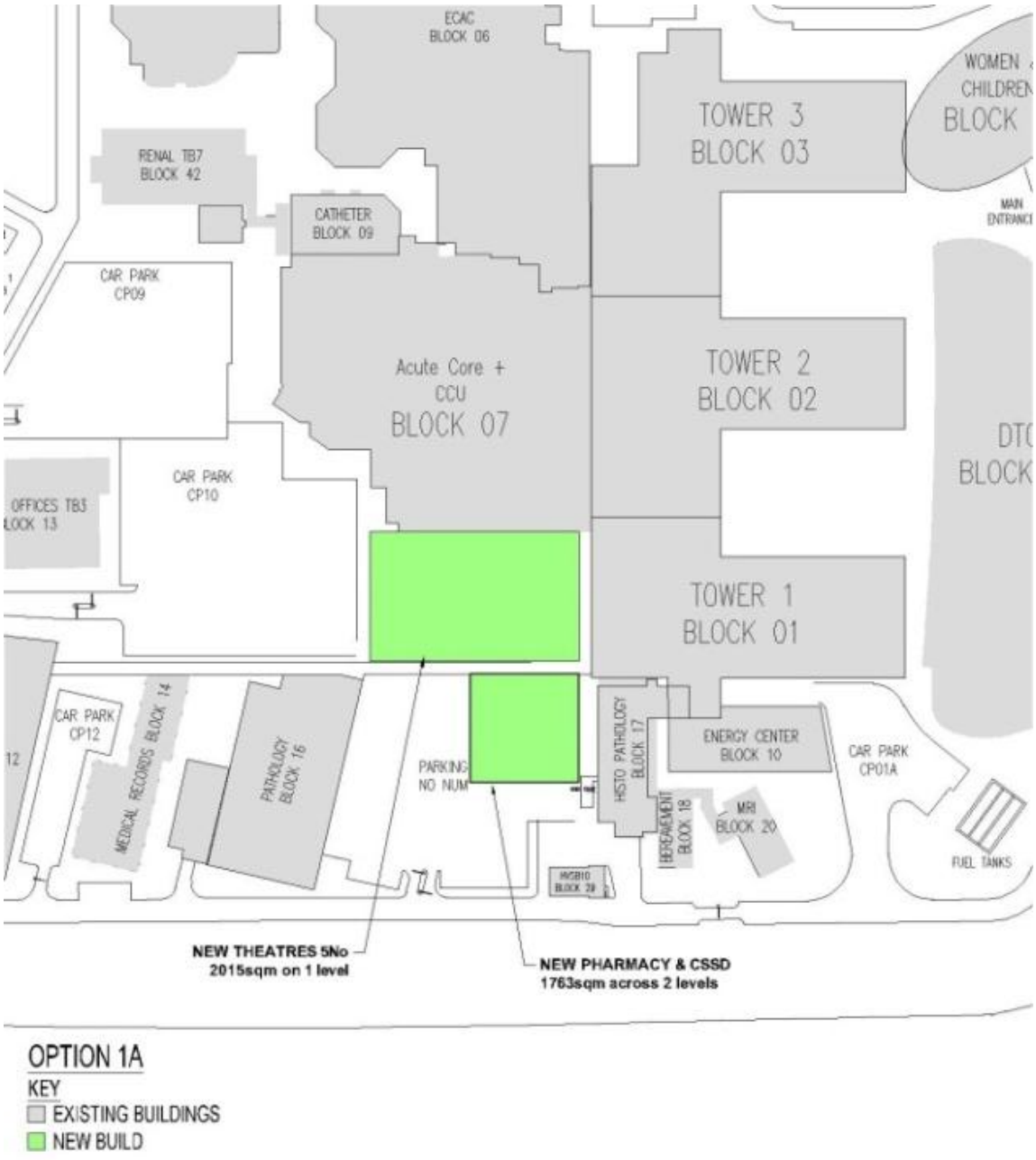
All changes are at level G and level 1.

The proposed changes are:

1 Demolish southern part of the acute block (old theatres and bed workshops/ former catheter labs)

2 Create new build theatres at the southern part of the acute core (area of demolition). Establish pharmacy and CSSD block as a new build adjecent to the new theatre block to the south of the link corridor on the unnumbered car park, which has the advantage of minimising enabling works





Once this new build is complete, other parts of the existing theatres could be mothballed, reconfigured for other purposes, or subsequently demolished to enable future development. Imaging, ITU, cardiac catheter labs and other parts of the acute core would be retained for the time being.

Advantages

- Replaces the theatres and pharmacy and CSSD accommodation.
- Minimal disturbance to other accommodation
- Likely to be the lowest capital cost solution

Disadvantages

- Does not address under-utilisation in the estate as a whole and therefore may not be value for money over the longer term.

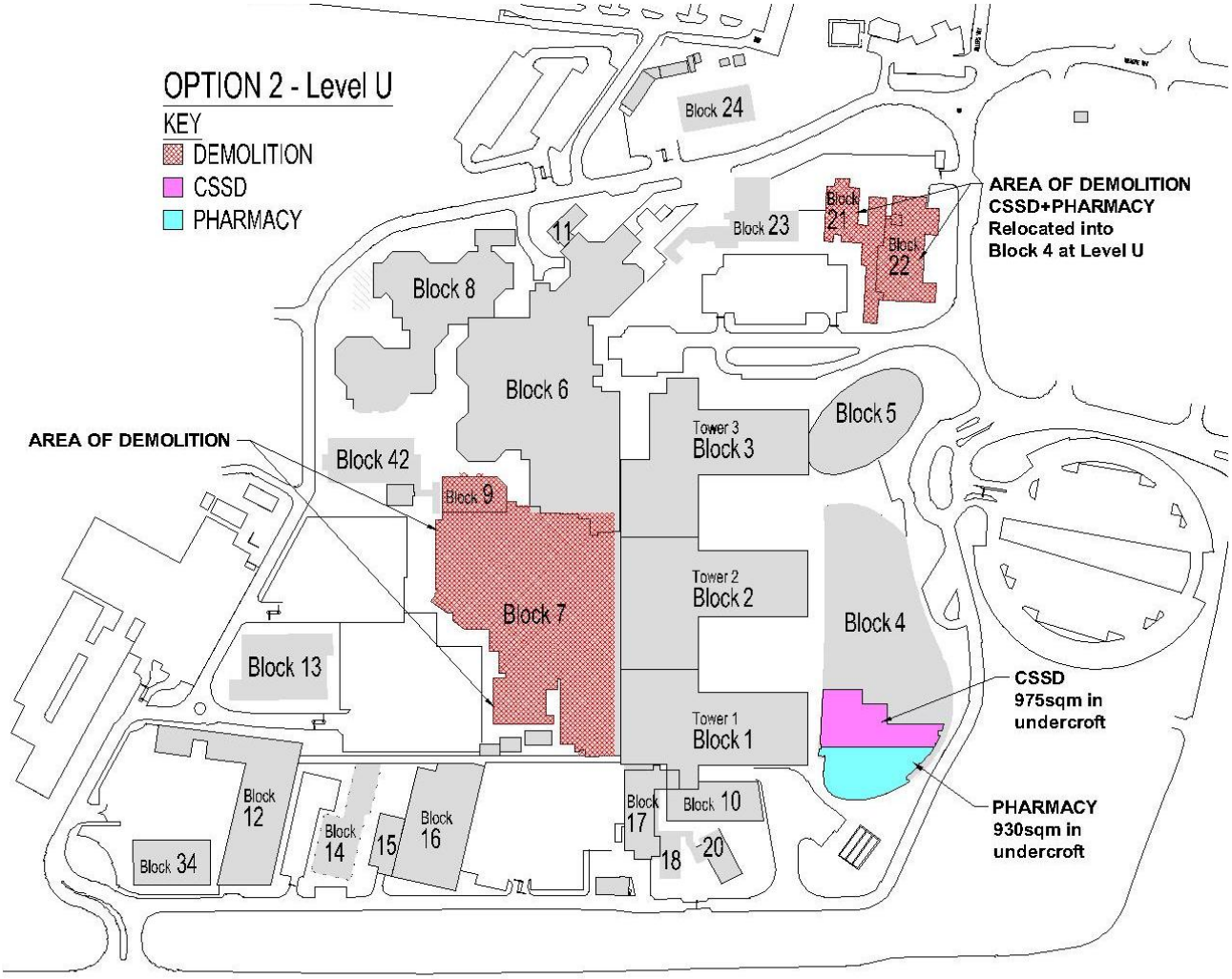
Option 2

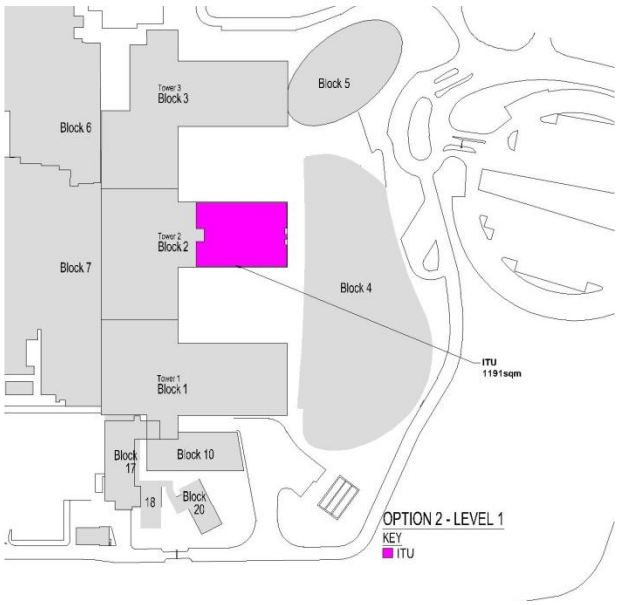
Option 2 requires changes at four levels. The pharmacy and CSSD are located at level U. It is assumed that these areas are reconfigured as deep plan, thereby creating additional usable area. The hydrotherapy pool and some specialist therapy/rehabilitation space can be retained in level U.

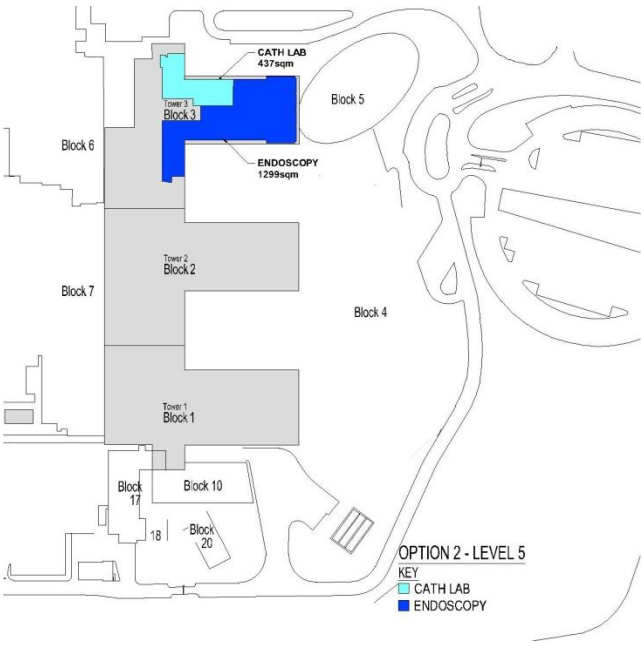
Imaging and MRI are relocated in the area vacated by endoscopy and theatres are relocated on level G of the Kings Treatment Centre.

ITU is relocated on the first floor of Tower 1 and endoscopy and cath labs would relocate to the current location for GU medicine in Tower 3 on the 5th floor. The GUM department would relocate to a peripheral building, Byron House, which would need to be reconfigured and expanded.

It is assumed that MEMD would be relocated with medical physics and that this can be absorbed within available space in the nucleus accommodation.







Advantages

- Creates clear surgical zone
- Discreet area for GUM at Byron House, but note cons.
- Sweats PFI accommodation

Disadvantages

- Relationship between ITU. EAU, A&E is compromised.
- Endoscopy and cath labs in wrong location
- Need to extend and reconfigure Byron House for GUM, unlikely to be value for money
- Location of GUM in Byron House creates other issues, e.g. link to pathology etc.

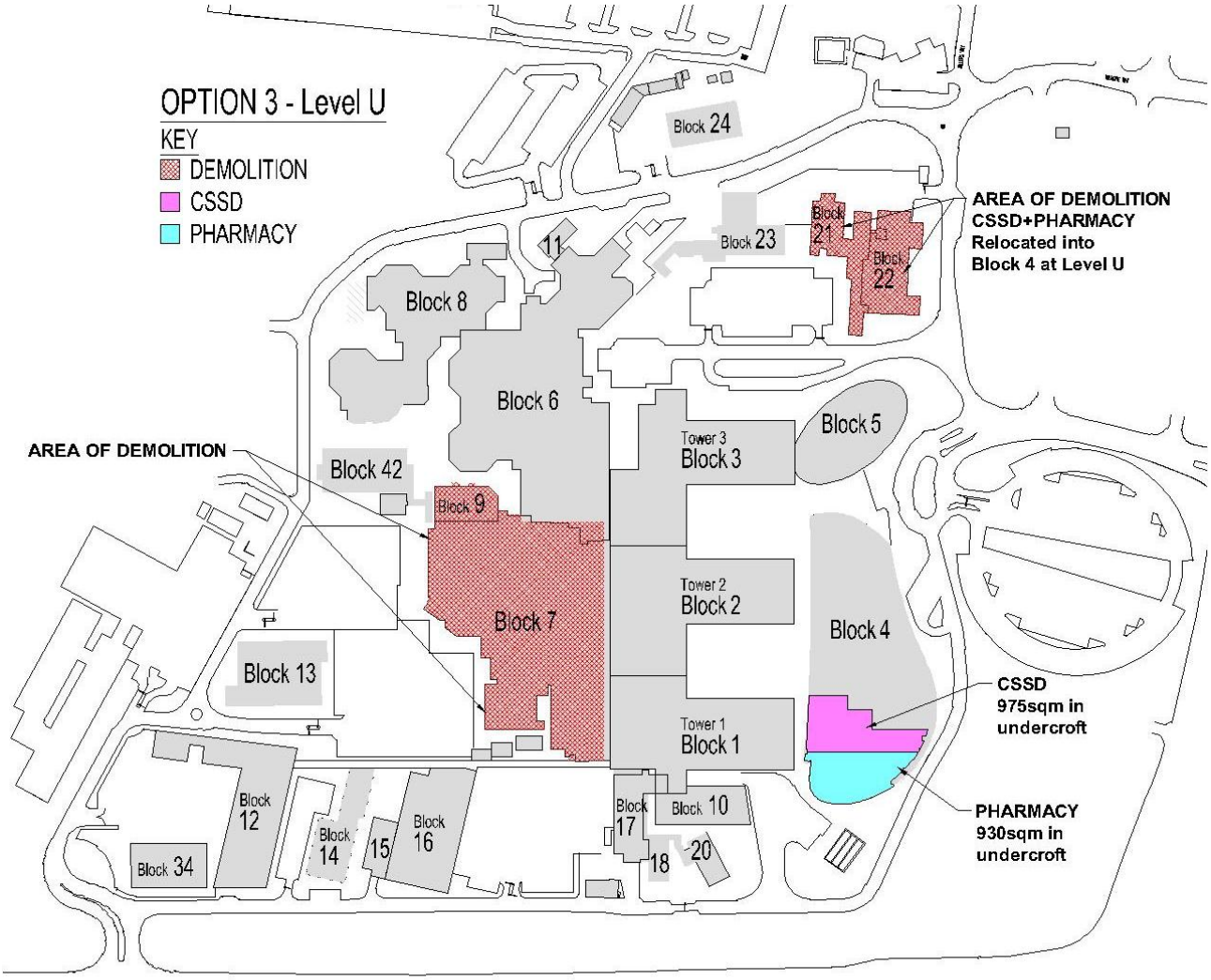
Option 3

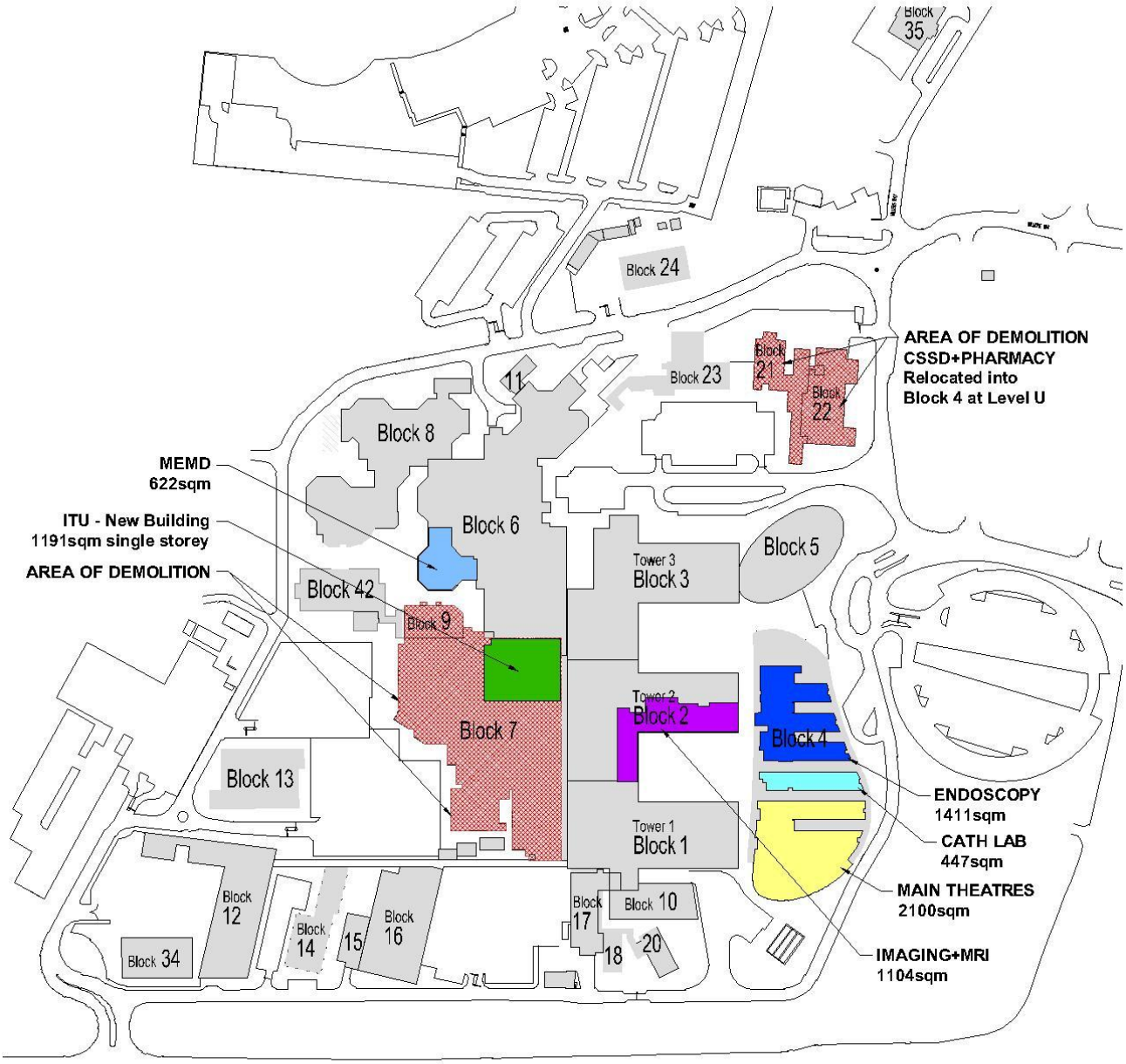
Under option 3, the pharmacy and CSSD would be relocated in level U of the Kings Treatment Centre (as in option 2).

Level G of the Kings Treatment Centre would be given over to surgical and related functions, with the main theatres, cath lab and endoscopy occupying all of this level combined. Imaging and MRI would relocate to the level G of Tower 2, where endoscopy is currently located.

ITU would be relocated in a new building adjacent to the existing A&E. MEMD would be absorbed into available space in the nucleus building.

On the assumption that the total number of wards could be reduced by 1, and that the area required for GUM could be reduced by 50% then the equivalent of two wards space could be created to house displaced outpatients.

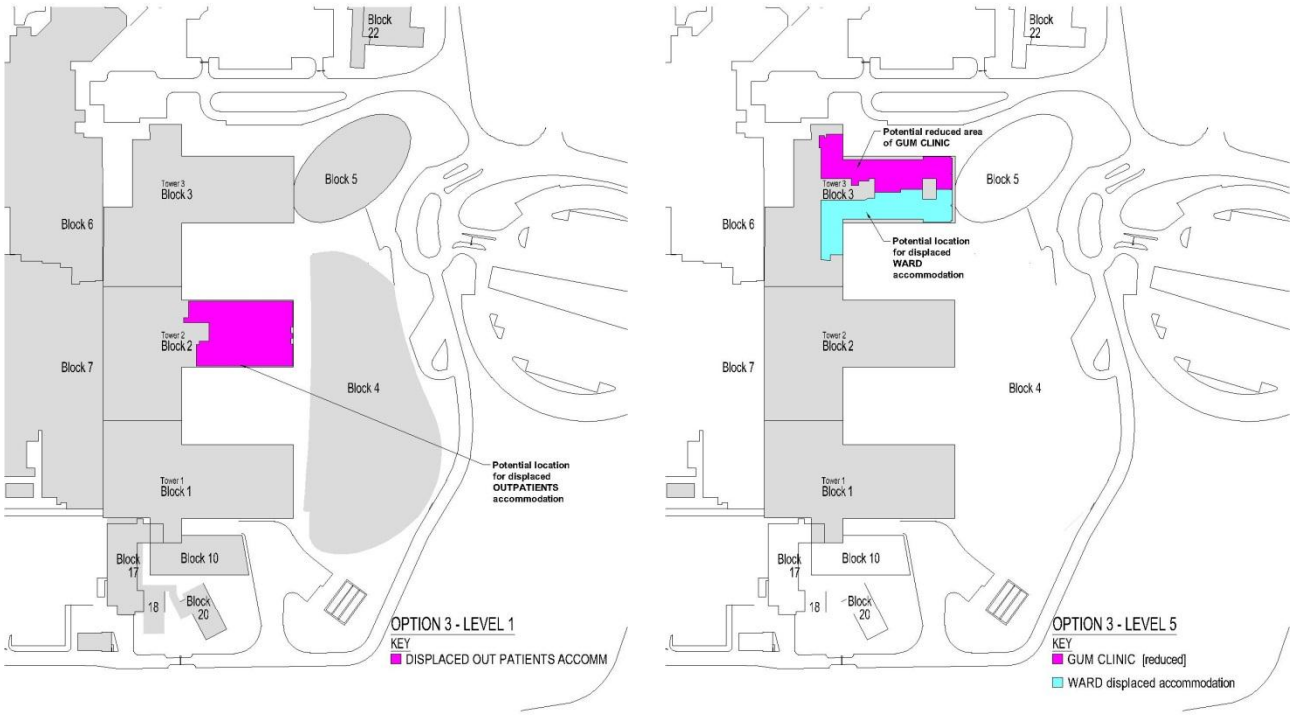




OPTION 3 - LEVEL 0

KEY

- DEMOLITION
- NEW BUILD - ITU
- MEMD
- IMAGING+MRI
- CATH LAB
- ENDOSCOPY
- MAIN THEATRES



Advantages

- One cohesive surgical centre forms an area for surgeons, anaesthetists and endoscopists.
- Theatres/Endoscopy good adjacency to CSSD
- Central easy access to imaging for all departments
- ITU in good location.
- Future proofed for changes/developments in emergency medicine.

Disadvantages

- Outpatient centre accessibility compromised
- Hydrotherapy split from rest of Physiotherapy
- Disturbing Tower 2 at level 1 and 2 would be very disruptive. Would be challenge to re-provide gynaecology and EPU with appropriate links to Women and Children's Centre.

Option 4

Option 4 has been developed following comments provided by the Trust's estates team. The aim of this option is to achieve good adjacencies for surgery and emergency medicine, but without unduly compromising the 'front door' identity of both the outpatients and women and children's centre.

Proposed changes

Level U: As in options 2 and 3, it is proposed to locate pharmacy and CSSD in this level. An alternative arrangement within level U is proposed, to enable the creation of deep plan areas for pharmacy and CSSD and to locate patient facilities in day-lit areas.

Level G: Extensive change is proposed here. Pharmacy (dispensing) would be relocated to the northern end of the Kings Treatment Centre, with endoscopy and cath lab located at the southern end.

Main theatres would be located on the ground floor of Tower 2.

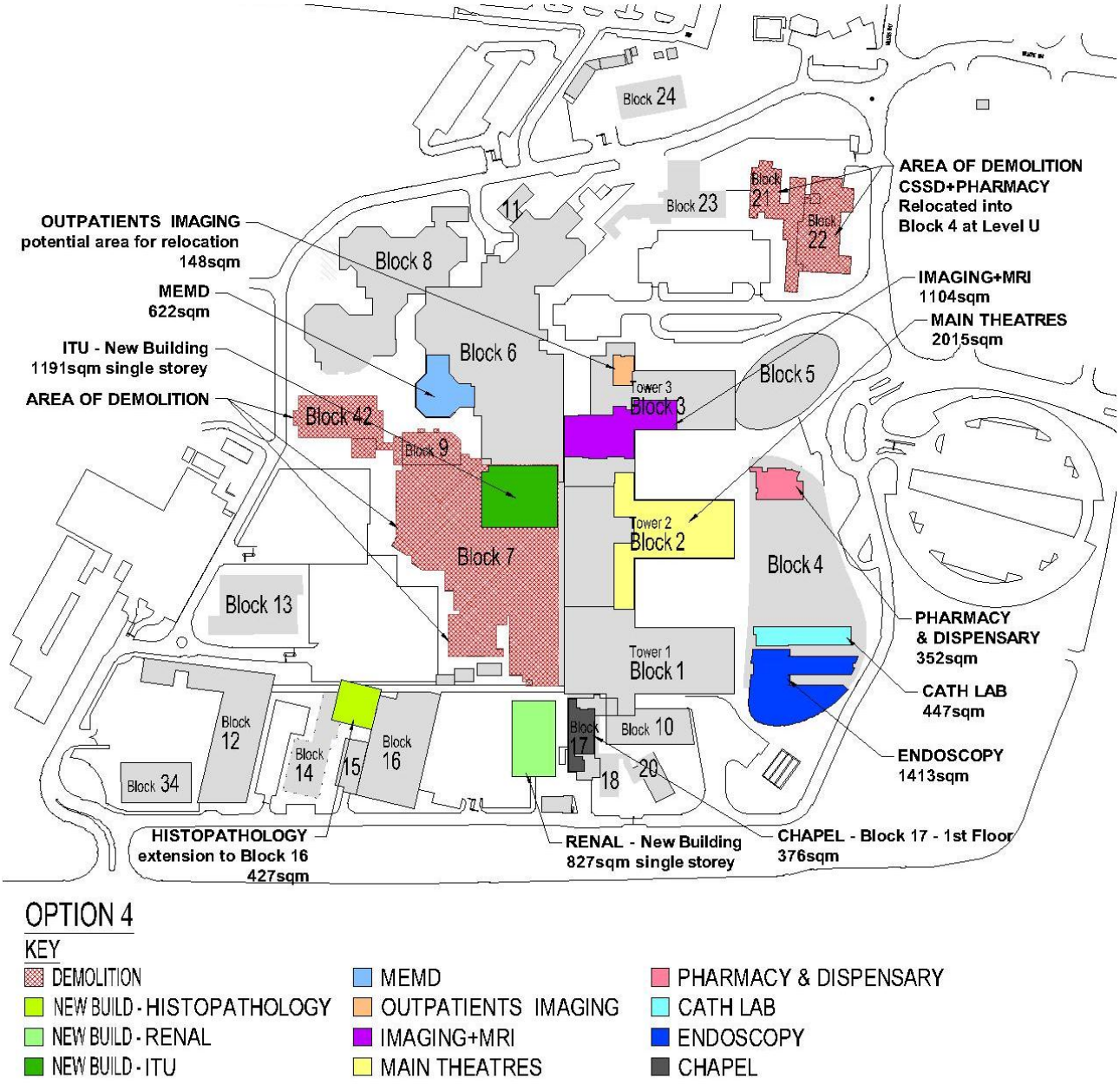
The chapel would need to be relocated to the south of the towers, along with the existing bereavement block, to help create space to relocate imaging and MRI. Outpatient imaging would also need to be incorporated (to enable Tower 2 to provide surgery).

Histopathology would relocate, to enable the creation of the southern zone where pastoral facilities and eventually renal (accessible for both inpatients and outpatients) could be located. Histopathology could either be absorbed in pathology, if reconfiguration is viable, or as an extension if not.

MEMD would be absorbed in nucleus accommodation as before.

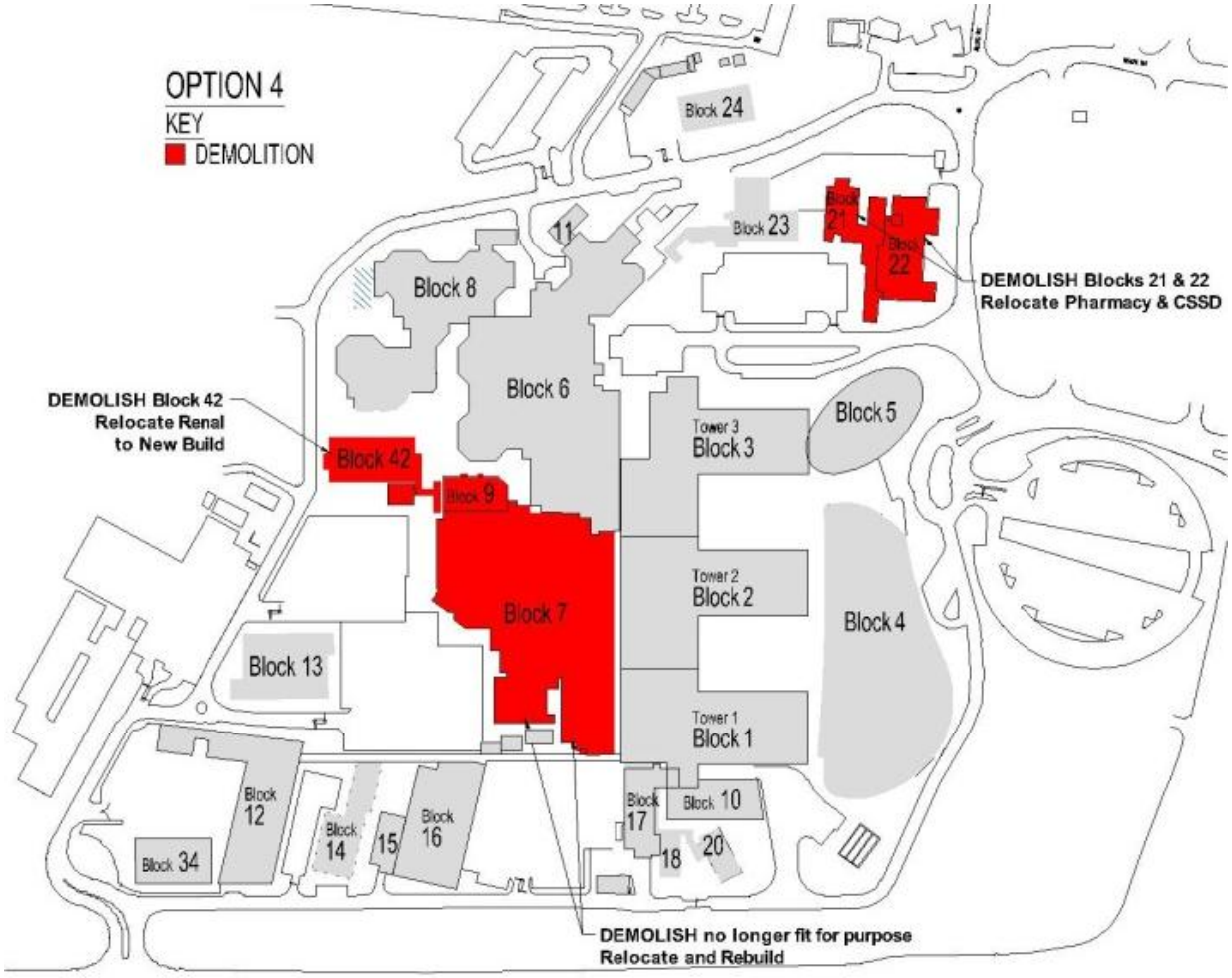
ITU would be relocated to the south of A&E and EAC as in option 3.

GU Medicine could relocate (either to a reconfigured and expanded Byron House) or elsewhere to create additional space on level 5 of Tower 3 to accommodate other potentially displaced services.

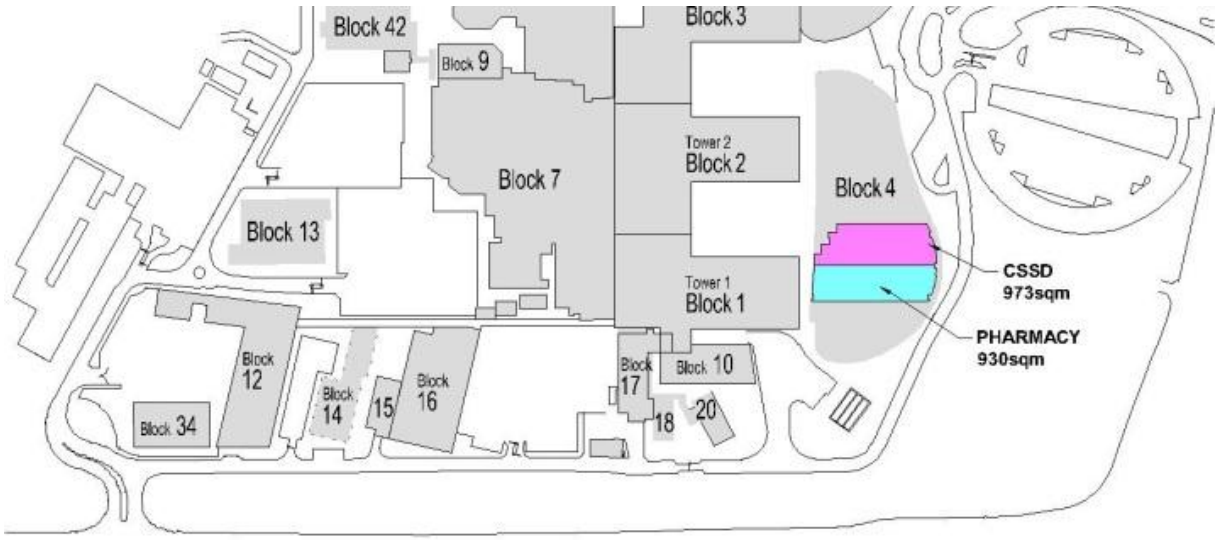


The following diagrams show the areas of demolition, as well as changes at other levels (levels U and 5) respectively.

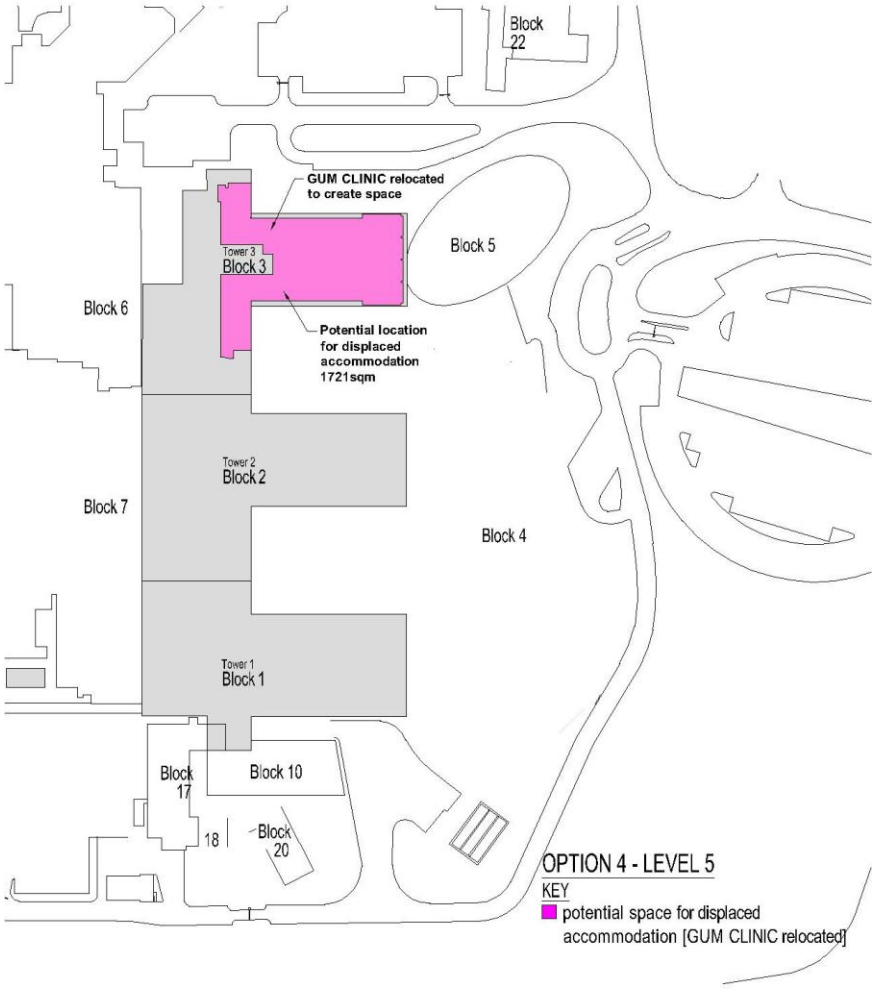
Demolition



Level U



Level 5



Advantages

- Establishes single surgical zone
- Single imaging in central location close to A&E & surgery
- Does not disturb women's health and Tower 2 wards
- Retains 'front door' for women & children's and outpatients access
- Improved location for renal and zone created for future EAU & acute works

Disadvantages

- Long and complex programme
- May require more new build accommodation compared to other options

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